



THIRD ANNUAL REPORT
OF
The Harcourt Butler Institute of
Public Health, Rangoon
FOR THE YEAR 1928

Rangoon

Supdt., Govt. Printing and Stationery, Burma

1929

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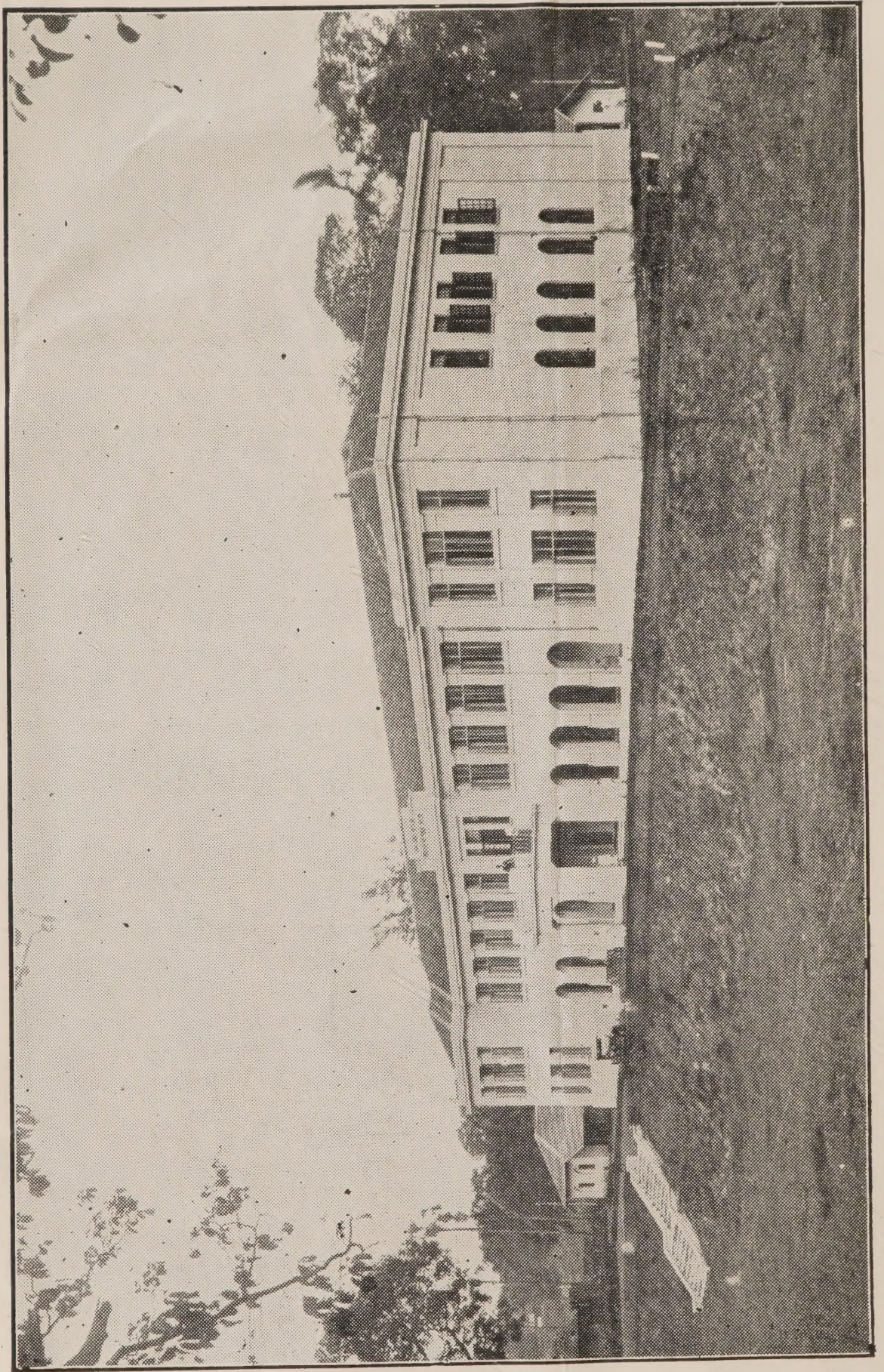
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Presented to

The Institute

August

1929



THE HARCOURT BUTLER INSTITUTE OF PUBLIC HEALTH, RANGOON.

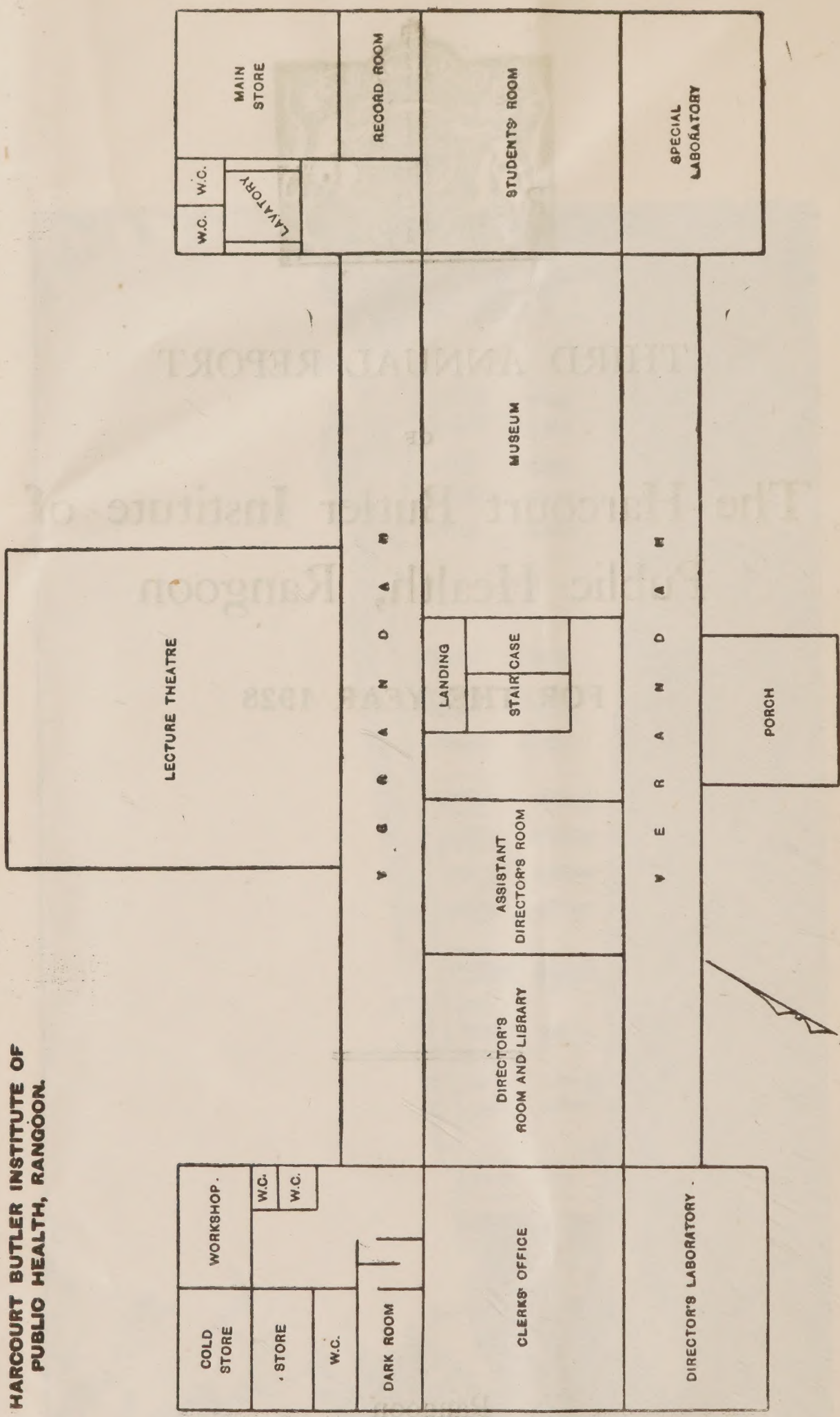


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**HARCOURT BUTLER INSTITUTE OF
PUBLIC HEALTH, RANGOON.**



GROUND FLOOR PLAN

RESOLUTION

ON THE

Report on the Working of the Harcourt Butler Institute of Public Health, Rangoon

For the Year 1928.

Extract from the Proceedings of the Government of Burma, Public Health Department,—No. 145S29, dated the 1st July 1929.

READ—

The Report on the Working of the Harcourt Butler Institute of Public Health,
Rangoon, for the year 1928.

RESOLVED THAT—

The Report be published.

By order,

F. H. STEAVENSON,

*Secretary to the Government of Burma,
Education Department.*

(8)
PUBLIC HEALTH DEPARTMENT.—No. 4406—11S.-6-29.

FROM

LIEUT.-COL. G. G. JOLLY, C.I.E., M.B., Ch.B., D.P.H., I.M.S.,
Director of Public Health, Burma.

TO

THE SECRETARY TO THE GOVERNMENT OF BURMA,
EDUCATION DEPARTMENT.

Dated the 15th April 1929.

SUBJECT.—*Third Annual Report of the Harcourt Butler Institute of
Public Health.*

SIR,

In forwarding herewith the third Annual Report of the Harcourt Butler Institute of Public Health, I have the honour to state that the work of the Institute has developed considerably during the year. The greatest need is for a full-time Director, and this matter has now been referred to the High Commissioner for India to recruit a suitable officer. The Institute combines most happily the work of a Public Health School, Provincial Public Health Laboratory and Research Institute in problems of Public Health. Attention is particularly invited to the large amount of teaching which has been carried on throughout the year. This has put a heavy tax on the staff of the Institute and of the Public Health Department, and it is impossible to increase the work now being done in this direction without an increase of staff. A proposal has been submitted to Government for the engagement of a Public Health Analyst to take charge of the Chemical Section when U Thein Kin, B.A., F.C.S., retires towards the end of 1929. The recruitment of such an officer is very necessary in view not only of the large and increasing amount of important analytical work which is being carried out in the chemical side, but also because of the impending introduction of Food and Drugs legislation, which requires the services of a highly qualified and experienced analyst.

The most important investigation work carried out at the Institute during the year was the Rat-Flea Survey of the Rangoon Port area. Seven thousand two hundred and ninety-three rats and 18,884 fleas were examined and the results showed an overwhelming predominance of *X. astia* in the port area, the figures being :—

<i>X. astia</i>	...	...	94.76 per cent.
<i>X. cheopis</i>	...	...	5.24 per cent.

while the average number of fleas per rat was—

<i>X. astia</i>	...	...	2.4535.
<i>X. cheopis</i>	...	...	0.1344.

It is suspected that this high percentage of *X. astia* is associated with the distribution of the various species of rats in this area, the actual figures being given below :—

<i>Nesokia bandicota</i>	...	...	1,898
<i>Mus decumanus</i>	...	...	870
<i>Mus Concolor</i>	...	...	2,291
<i>Nesokia bengalensis</i>	...	...	336
<i>Rattus rattus</i>	...	...	644
<i>Mus musculus</i>	...	...	976
<i>Crocidura coerulea</i>	...	...	277

It is intended to extend the area of the survey during the coming year to Rangoon Town, where it is anticipated that a different distribution of rats and rat-fleas may be obtained.

A great deal of important work has been carried out during the year in the Malaria Bureau, and valuable information concerning the distribution and the biology of the anopheles transmitters of Burma has been collected.

My thanks are due to the staff of the Institute for the efficient manner in which they have carried out their work throughout the year, and for the zeal and interest they have shown in investigation. It is a principle of this Institute that each officer working in it shall contribute to the teaching and shall also take up some kind of original investigation work.

I have the honour to be,

SIR,

Your most obedient servant,

G. G. JOLLY, *Lieut.-Col., I.M.S.*,

Director of Public Health, Burma.

THIRD ANNUAL REPORT

OF

The Harcourt Butler Institute of Public Health, Rangoon

For the year 1928.

Staff of the Institute—Director.—Lieutenant-Colonel G. G. Jolly, C.I.E., M.B., D.P.H., D.T.M., I.M.S., held charge of the Institute from 1st January to 14th March 1928 when Major C. L. Bilderbeck, M.A., M.B., D.P.H., D.T.M. & H., I.M.S., took over, and held charge from 15th March to 22nd August 1928. From this latter date Major E. C. A. Smith, L.R.C.P. & S., D.P.H., I.M.S., held temporary charge until transferred to Bombay, when Major C. L. Bilderbeck, M.A., M.B., D.P.H., D.T.M. & H., I.M.S., resumed the appointment on 22nd October 1928 and held it to the end of the year.

Assistant Director.—Dr. G. Mackey, D.T.M., I.M.D., from 1st January to 30th September 1928.

U Thein Kin, B.A., F.C.S., A.T.M., from 1st October to 20th November 1928.

Dr. G. Mackey, D.T.M., I.M.D., from 20th November to 31st December 1928.

Chemist.—U Thein Kin, B.A., F.C.S., A.T.M.

Assistant Malariologist.—Dr. E. S. Feegrade, D.T.M., I.M.D.

Assistant Bacteriologist.—Dr. V. W. Fenn, L.S.M.F.

Assistant Chemist.—Mr. G. C. Moitra, B.Sc., F.C.S., from 1st January to 22nd May 1928.

Mr. J. Sanyal, B.Sc., from 23rd May to 31st December 1928.

General.—During the year under report the activities of the Institute have further developed in the three main channels of Teaching, Public Health Laboratory Work, and Investigation. Five courses of instruction in Public Health were conducted during the year :—

(1) The Rangoon University M.B. Course in Hygiene and Public Health.

(2) The Government of Burma Medical School Course in Public Health.

(3) The Rangoon University Course in School Hygiene for the Teachers' Diploma.

(4) The Government of Burma Qualifying Course for Public Health Inspectors.

(5) The Government of Burma's License in Hygiene Course for Sub-Assistant Surgeons of the Public Health Department.

In addition a course in First Aid and Tropical Hygiene for members of the St. John Ambulance Women's Nursing Corps was held during the year.

Laboratory Work—

A. Bacteriological Section.—The following work was done in the Laboratories of this Section :—

Water examinations	...	...	...	227
Water investigation at Monkey Point Area	...	...	...	13
Shaving brushes for anthrax	...	...	...	16
Widal's tests	...	...	...	5
Analyses of milk	...	...	...	3
Analyses of tinned fish	...	...	...	1
Examination of urine	...	...	...	6
Examination of faeces	...	...	...	4
Miscellaneous microscopic examinations	...	...	...	15

B. Chemical Section—

Waters.—Samples received from :—

Jails	...	...	...	93
Municipalities and District Councils	...	...	...	102
Public Works Department	...	...	...	86
Military	...	...	...	5
Civil Surgeons	...	...	...	9
Private	...	...	...	35
Admiralty Oil Fuel Depôt	...	...	...	72
Others	...	...	...	29

Food and Miscellaneous :—

Medical Store Depôt—

Santonin	...	...	...	1
Ether	...	...	...	2
Camphor	...	...	...	1

Jails—

Cinchona	...	...	...	1
Milk	...	...	...	2
Oils	...	...	...	2

District Health Officers—

Ghee	...	...	...	6
Saccharine	...	...	...	2
Rice	...	...	...	1
Oils	...	...	...	4

Rangoon General Hospital—

Electrolytic Chlorine	...	...	...	27
-----------------------	-----	-----	-----	----

Military—

Rum	...	...	...	1
Rice	...	...	...	34
Milk	...	...	...	3
Condensed milk	...	...	...	11
Butter	...	...	...	1

Food and Miscellaneous—*concl'd.*

Police—

Ghee	...	...	...	...	56
Oils	...	...	...	...	25
Rice	...	...	...	...	73

Public Works Department—

Bleaching Powder	...	...	...	...	1
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Corporation of Rangoon—

Ghee	...	...	...	...	174
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Others—

Ghee	...	...	...	...	1
Oil cakes	...	...	...	...	2
Rice bran	...	...	...	...	34
Paddy	...	...	...	...	2
Rice	...	...	...	...	2
Sugars	...	...	...	...	3
Milk	...	...	...	...	1
Water deposits	...	...	...	...	1

Municipalities—

Oil	...	...	...	...	3
-----	-----	-----	-----	-----	---

Director of Public Health, Burma—

Ghee	...	...	...	...	1
Rice	...	...	...	...	4
Milk	...	...	...	...	1
Tea	...	...	...	...	24

Customs—

Ghee	...	...	...	...	29
Vegetable products	...	...	...	...	3

Hospitals—

Human milk	...	...	...	...	2
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Port Commissioners—

Rice	...	...	...	...	3
------	-----	-----	-----	-----	---

Civil Surgeons—

Quinine	...	...	...	...	3
Milk	...	...	...	...	2

The Institute—

Ngapi	...	...	...	...	24
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Investigations.—The two major investigations carried out at this Institute during the year were :—

- (1) Flea Survey of the Rangoon Port Area.
- (2) An investigation carried out in connection with the Rangoon Water Supply Survey, 1928.

(1) *Flea Survey of the Rangoon Port Area.*—The object of this survey was to determine the different varieties of rats and fleas prevalent in the Rangoon Port with a view to ascertaining the proportion in which these plague factors exist. This survey was commenced on 4th of January with the examination of 10 rats a day selected at random from the number trapped in the Port Area.

Shortly after the commencement of this survey it was decided to increase the number of rats examined per day to 40, and—as this work

required additional staff—the Governing Body, Indian Research Fund Association, was asked to meet the pay of the extra personnel required.

This sanction having been received the examination of 40 rats (*i.e.*, 6 rats each from 5 areas, and 10 from the sixth) per day was commenced on the 4th May and continued till the end of the year.

Progressive reports on the work carried out were forwarded to the Secretary, Indian Research Fund Association, and the report on this survey covering a period of one year will be published in due course.

(2) *An Investigation carried out in connection with the Rangoon Water Supply Survey, 1928.*—The object of this investigation was principally to determine the upstream tidal limit of the river salinity with a view to locating a suitable intake if desired hereafter.

It was also desired to determine the turbidity of the water in order to estimate the amount of silt which would have to be removed from the river water.

This work was commenced on 24th March 1928, and on May 23, Mr. Moitra was placed on deputation under the Officer-in-charge, Rangoon Water Supply Scheme, and continued on deputation till the end of the year.

Monkey Point Water Investigation.—At the request of the Officer-in-charge, Brigade Laboratory, Rangoon, several samples of water collected within and around the Monkey Point Area were examined bacteriologically with a view to tracing the source of pollution of the piped-water supply in the Monkey Point area. This water when first examined was found to be dangerously polluted, and was also objectionable owing to the odour emanating therefrom. The results of examination were communicated to the authorities concerned, who, acting thereon, were able to trace the cause and remedy the situation.

Jumping Powers of Rats.—A small investigation into the jumping powers of various species of rats was commenced in January of the year under report. For this purpose a specially designed building was erected, and the investigation proceeded satisfactorily while bandicoots were being experimented with. A *Rattus rattus* however gave definite proof that the room would have to be more cunningly designed in order to frustrate ways and means of reaching food other than by a direct jump. His method of approach was eventually detected by plastering soft plasticine brushed over with a solution of glycerine and fuchsin or other colours on certain parts of the shelf, walls and floor over which it was suspected the rat passed to gain access to the food. He thus left a tell-tale coloured track behind him in addition to impressions of his claws in the soft plasticine. Certain structural alterations in the room are now being carried out which should eliminate such circumvention.

Malaria Bureau.—Dr. E. S. Feegrade held charge of the Bureau assisted by Sub-Assistant Surgeon U Tin. An entomological collection consisting of biting flies, etc., from Rangoon and various parts of Burma

was made during the year. These flies were very kindly identified by Dr. Buxton of the London School of Hygiene and Tropical Medicine, and specimens required by the British Museum have been presented thereto.

Publications.—Papers recording the work done on the following subjects have been submitted for publication in the Indian Journal of *Medical Research* and the *Indian Medical Gazette* :—

- (1) A Short Note on the Anopheline Fauna of the Tank West of the Harcourt Butler Institute of Public Health, Rangoon.
- (2) Experiments with Isotex as Larvicide.
- (3) Observations on the marking of *A. jamesii* (Theobald).
- (4) Some more variants of *A. fuliginosus* (Giles) from Burma.
- (5) Experiments to note the Larvicidal effects of Sodium Nitrate, Potassium Nitrate, and Magnesium Sulphate in natural waters.
- (6) Results of Experiments with Crude Oil Products of the Burma Oil Co., Ltd., Rangoon.
- (7) A Year's Record of Kata-thermometer readings in Rangoon.

Anti-larval Experiments with Explosives.—Major C. L. Bilderbeck, I.M.S., investigated the action of explosives on mosquito larvae during the year.

The water collection considered most suitable for these anti-larval experiments was a U-shaped tank north of the Harcourt Butler Institute of Public Health, Rangoon. The length of the tank from end to end is approximately 150—200 yards,—the breadth varies from 10 to 50 yards and the depth does not exceed 6 feet in its deepest part. The greater curve of the U had a thick growth of aquatic vegetation, the edges throughout are overgrown with grass, and under the larger trees twigs and leaves floated on the water surface.

Previous to the experiments the tank was dragged to save the larger fish.

Anopheline larvae were collected from other parts and placed at measured distances from the site at which the explosives were to be detonated.

In the first experiment a gun cotton primer was submerged to about a foot below the water's surface and exploded producing only a bubbling surface bulge as a result. The explosive action did not even injure fish in the immediate neighbourhood nor anopheline larvae at a distance of 50 feet.

The second experiment with a gun cotton slab placed at a depth of 3 feet below the surface produced a much greater explosion but harmed neither fish nor larvae ; the latter having been placed in the water along the banks at the same distance as in the first experiment.

The third experiment was undertaken with a one ounce dynamite cartridge, placed at a depth of 3 feet as in the former experiments, but although it produced larger ripples and a higher spout of water, the

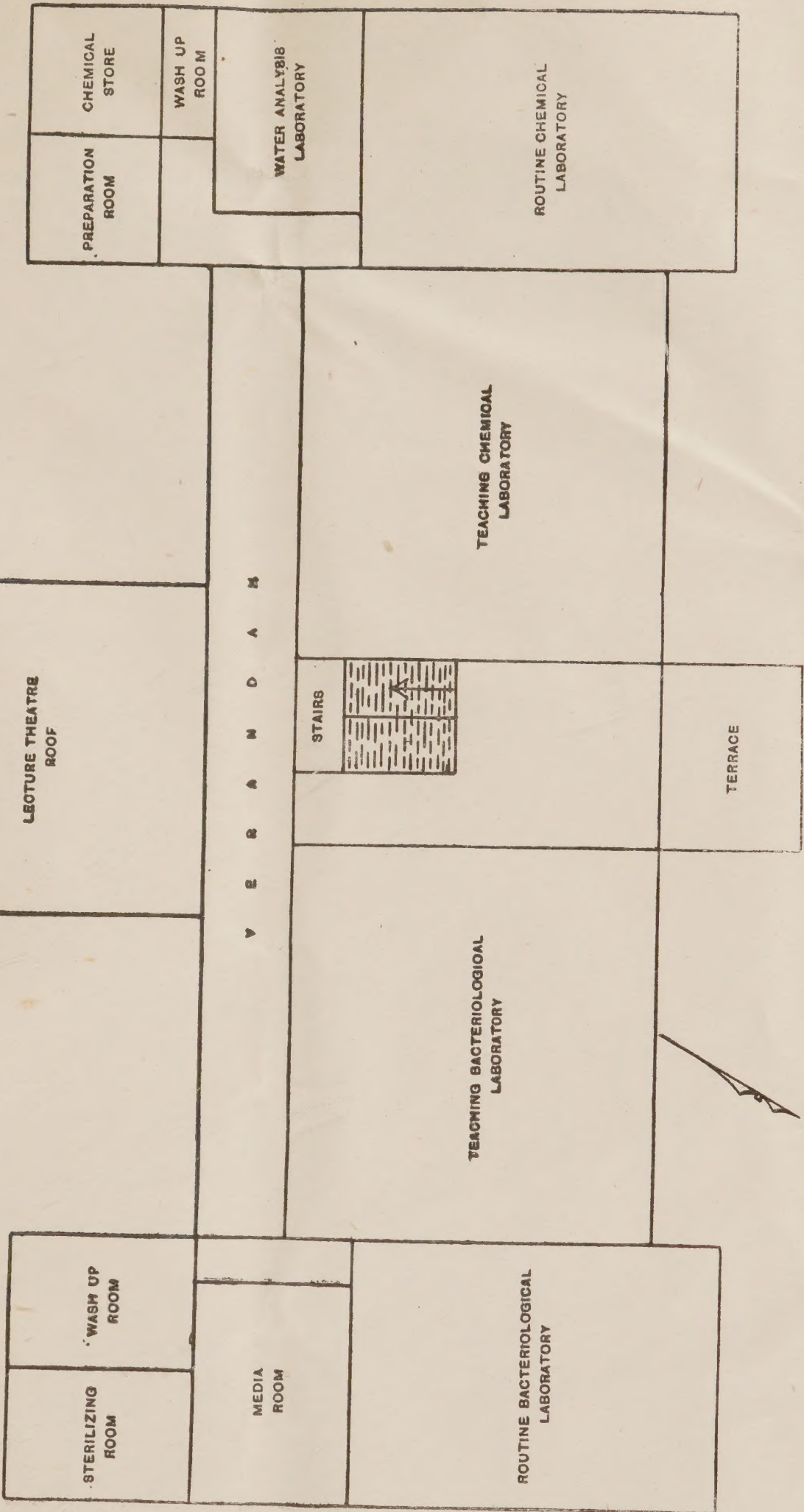
effect on the larvae was negative. On the same day four cartridges of dynamite of one ounce each were detonated together. The bank up to 75 feet away vibrated and the water shot up to about 20 feet, but though a few fish came floundering to the surface, no effects on larvae were noted. These experiments were therefore altogether negative, and the only explanation for it is that the water may have been too shallow, so that much of the force was expended upwards instead of laterally as probably occurred in Mesopotamia where bombs detonated deep in the river resulted in wholesale destruction of small fish.

Museum.—The Museum functions entirely as a Public Health Museum. A number of models have been prepared by Dr. Fenn, Assistant Bacteriologist, and the Museum is now serving the purpose for which it was intended, *i.e.* illustrating by means of models, diagrams, charts, photos, etc., various matters in relation to Public Health work.

Buildings.—An animal house with six rooms opening into a courtyard enclosed with expanded metal was constructed during the year.

J. A. ANKLESARIA, M.B., B.S., D.P.H.,
Director, Harcourt Butler Institute of Public Health, Burma.

HARCOURT BUTLER INSTITUTE OF
PUBLIC HEALTH, RANGOON.



UPPER FLOOR PLAN

Scale 1 inch = 24 feet.

